Name of company: Boehringer Ingelheim		**Tabulated Trial Report**	Boehringer Ingelheim
Name of finished product: Mucosolvan®		**EudraCT No.: n.a.** n.a.	
Name of active ingredient: Trans-4-[(2-amino-3,5-dibromo-benzyl)amino]cyclohexanol hydrochloride (= Ambroxol hydrochloride)		**Page:** 1 of 25	**Synopsis No.:** n.a.
Module: n.a.		**Volume:** n.a.	
Report date: 27 JUL 1977	**Trial No. / U No.:** U77-0166	**Date of trial:** n.a.	**Date of revision:** n.a.

Title of trial:	Final report on clinical trial of NA 872. Clinical Study in Children- Dose-Response Study
Principal/Coordinating Investigator:	von Seefeld
Trial sites:	Multicenter (4 centers)
Publication (reference):	Boehringer Ingelheim in-house report, 27 July 1977.
Clinical phase:	II
Objectives:	Assessment of the efficacy of ambroxol in paediatric patients by measuring the relief of symptoms of acute and chronic airways disease such as chronic rhinitis, sinusitis, bronchitis, or common cold
Methodology:	Open, uncontrolled Dose response study
No. of subjects:	32 (18 male, 14 female), aged 10 months–12 years) < 2 yrs: 6 2-5 yrs: 11 > 5 yrs: 15 3 children were dismissed at Day 14 because they had recovered.
Diagnosis and main criteria for inclusion:	acute and chronic airways diseases (bronchitis, asthmatic bronchitis, chronic bronchitis, bronchopneumonia, bronchial asthma, mucoviscidosis, chronic bronchitis with suspected bronchiectasis
Test product:	Ambroxol Tablets, NA 872

Name of company: Boehringer Ingelheim		Tabulated Trial Report	Boehringer Ingelheim
Name of finished product: Mucosolvan®		**EudraCT No.:** n.a.	
Name of active ingredient: Trans-4-[(2-amino-3,5-dibromo-benzyl)amino]cyclohexanol hydrochloride (= Ambroxol hydrochloride)		**Page:** 2 of 25	**Synopsis No.:** n.a.
Module: n.a.		**Volume:** n.a.	
Report date: 27 JUL 1977	**Trial No. / U No.:** U77-0166	**Date of trial:** n.a.	**Date of revision:** n.a.

dose:	3 x 2.5 mg during days 1-3, 3 x 5 mg during days 4–6, and 3 x7 .5 mg during days 7–9. The dosage was adapted to individual needs during days 10–25. Dose was increased to 3 x 10 mg/day in 12 cases. One patient from group 2- 5 yrs no longer received daily dose of 22.5 mg on days 7 to 9 because 15 mg/day proved sufficiently effective.
mode of admin.:	oral
batch no.:	N/A
Reference therapy:	none
dose:	N/A
mode of admin.:	N/A
batch no.:	N/A
Duration of treatment:	25 days for 28 children, whereas 1 child was treated for 32 days.
Criteria for evaluation:	
Efficacy / clinical pharmacology:	Dose-Response Study Therapeutic efficacy - Improvement of expectoration (not evaluated in children < 2 years) - Reduction of cough - Easing of respiration (dyspnoea)
Safety:	Adverse events
Statistical methods:	Descriptive statistics

SUMMARY – CONCLUSIONS:

Name of company: Boehringer Ingelheim		Tabulated Trial Report	Boehringer Ingelheim
Name of finished product: Mucosolvan®		**EudraCT No.:** n.a.	
Name of active ingredient: Trans-4-[(2-amino-3,5-dibromo-benzyl)amino]cyclohexanol hydrochloride (= Ambroxol hydrochloride)		**Page:** 3 of 25	**Synopsis No.:** n.a.
Module: n.a.		**Volume:** n.a.	
Report date: 27 JUL 1977	**Trial No. / U No.:** U77-0166	**Date of trial:** n.a.	**Date of revision:** n.a.

Efficacy / clinical pharmacology results:	Symptoms improved in all groups. In the group < 2 years improvement could not be evaluated in expectoration. Improvement in bronchitic syndromes was obtained after application of , and the dose response relationship resulted in the recommendation of 7.5–22.5 mg/day for children aged 2–5 years and 7.5–30 mg/day for children >5 years. Optimum dose for children up to 2 years was 15mg/day, from 2–5 years 20 mg/day, over 5 years 30 mg/day.
Safety results:	Ambroxol was safe in all 32 children and only one child treated for 32 days complained of a facial erythema on treatment days 24–29. The adverse event was considered not related to the treatment by the investigator.
Conclusions:	In the dose range applied the drug was well tolerated. No side-effects related to ambroxol emerged and good general tolerability was observed

Name of company: Boehringer Ingelheim		**Tabulated Trial Report**	Boehringer Ingelheim
Name of finished product: Mucosolvan®		**EudraCT No.:** n.a.	
Name of active ingredient: Trans-4-[(2-amino-3,5-dibromo-benzyl)amino]cyclohexanol hydrochloride (= Ambroxol hydrochloride)		**Page:** 4 of 25	**Synopsis No.:** n.a.
Module: n.a.		**Volume:** n.a.	
Report date: 27 JUL 1977	**Trial No. / U No.:** U77-0166	**Date of trial:** n.a.	**Date of revision:** n.a.

Title of trial:	Final report on clinical trial of NA 872. Clinical Study in Children- Acceptability Study
Principal/Coordinating Investigator:	von Seefeld
Trial sites:	No data available.
Publication (reference):	Boehringer Ingelheim in-house report, 27 July 1977.
Clinical phase:	II
Objectives:	Assessment of the acceptability and efficacy of ambroxol in paediatric patients by measuring the relief of symptoms of acute and chronic airways disease such as chronic rhinitis, sinusitis, bronchitis, or common cold
Methodology:	Open , uncontrolled
No. of subjects:	Not indicated
Diagnosis and main criteria for inclusion:	Children with acute and chronic airways diseases
Test product:	Mucosulvan® Syrup (NA 872)
dose:	< 2 yrs: 1.6 mg/kg (15-22.5 mg) 2-5 yrs: 1.25 mg/kg (20 mg – 22.5 mg) > 5 yrs (up to 10 yrs): 1.2 mg/ kg (30 mg)
mode of admin.:	oral
batch no.:	N/A

Name of company: Boehringer Ingelheim		Tabulated Trial Report	Boehringer Ingelheim
Name of finished product: Mucosolvan®		**EudraCT No.:** n.a.	
Name of active ingredient: Trans-4-[(2-amino-3,5-dibromo-benzyl)amino]cyclohexanol hydrochloride (= Ambroxol hydrochloride)		**Page:** 5 of 25	**Synopsis No.:** n.a.
Module: n.a.		**Volume:** n.a.	
Report date: 27 JUL 1977	**Trial No. / U No.:** U77-0166	**Date of trial:** n.a.	**Date of revision:** n.a.

Reference therapy:	none
dose:	N/A
mode of admin.:	N/A
batch no.:	N/A
Duration of treatment:	Not indicated
Criteria for evaluation:	
Efficacy / clinical pharmacology:	Acceptability of Mucosolvan® syrup (2.5 mg/ml)
Safety:	Adverse events
Statistical methods:	Descriptive statistics

SUMMARY – CONCLUSIONS:

Efficacy / clinical pharmacology results:	Study on the acceptability of Mucosolvan® syrup led to recommendation of a dosage schedule of 1.6 mg/kg body weight (bw), with a recommended daily dose of 15 mg and a maximal daily dose of 22.5 mg for children up to 2 years; 1.25 mg/kg bw, with a recommended daily dose of 20 mg and a maximal daily dose of 22.5 mg for children between 2 and 5 years; and 1.2 mg/kg bw, with a recommended daily dose of 30 mg and a maximal daily dose of 30 mg for children over 5 years of age.
Safety results:	No side-effects related to ambroxol emerged and good general tolerability was observed.
Conclusions:	This acceptability study confirmed the dosages established in the dose response studies of the tablets

Name of company: Boehringer Ingelheim		Tabulated Trial Report	Boehringer Ingelheim
Name of finished product: Mucosolvan®		**EudraCT No.:** n.a.	
Name of active ingredient: Trans-4-[(2-amino-3,5-dibromo-benzyl)amino]cyclohexanol hydrochloride (= Ambroxol hydrochloride)		**Page:** 6 of 25	**Synopsis No.:** n.a.
Module: n.a.		**Volume:** n.a.	
Report date: 27 JUL 1977	**Trial No. / U No.:** U77-0166	**Date of trial:** n.a.	**Date of revision:** n.a.

Title of trial:	Final report on clinical trial of NA 872. Clinical Study in Children- Dose-Response Study
Principal/Coordinating Investigator:	von Seefeld / Hoffmann
Trial sites:	single center
Publication (reference):	Boehringer Ingelheim in-house report, 27 July 1977.
Clinical phase:	II
Objectives:	Assessment of the efficacy of ambroxol in paediatric patients by measuring the relief of symptoms of acute and chronic airways disease such as chronic rhinitis, sinusitis, bronchitis, or common cold
Methodology:	Open, uncontrolled, single center
No. of subjects:	25 children (1 – 15 yrs old) < 2 yrs: 1 2-5 yrs: 1 > 5 yrs: 23
Diagnosis and main criteria for inclusion:	Children with acute and chronic airways diseases Chronic rhinitis/ chronic sinusitis (11), chronic tracheitis or tracheobronchitsi (4) and combination of the two in 10 children
Test product:	Mucosulvan® solution for inhalation (NA 872)
dose:	15 mg/day (2 ml/inhalation) given for 6 days

Name of company: Boehringer Ingelheim		Tabulated Trial Report	Boehringer Ingelheim
Name of finished product: Mucosolvan®		**EudraCT No.:** n.a.	
Name of active ingredient: Trans-4-[(2-amino-3,5-dibromo-benzyl)amino]cyclohexanol hydrochloride (= Ambroxol hydrochloride)		**Page:** 7 of 25	**Synopsis No.:** n.a.
Module: n.a.		**Volume:** n.a.	
Report date: 27 JUL 1977	**Trial No. / U No.:** U77-0166	**Date of trial:** n.a.	**Date of revision:** n.a.

mode of admin.:	inhalation
batch no.:	N/A
Reference therapy:	none
dose:	N/A
mode of admin.:	N/A
batch no.:	N/A
Duration of treatment:	6 days
Criteria for evaluation:	
Efficacy / clinical pharmacology:	Acceptability of Mucosolvan® solution for inhalation
Safety:	Adverse events
Statistical methods:	Descriptive statistics

SUMMARY – CONCLUSIONS:

Efficacy / clinical pharmacology results:	Ambroxol 15 mg/day given for 6 days could relieve symptoms of chronic rhinitis and/or chronic sinusitis. A marked improvement of sinobronchial or tracheobronchial symptoms could be seen within the first 3 days in all children, with relief of headache and cranial pressure, as well as improvement of nasal and bronchial secretions and reduction of irritative cough.
Safety results:	The product was well tolerated in all children.

Name of company: Boehringer Ingelheim		Tabulated Trial Report	Boehringer Ingelheim
Name of finished product: Mucosolvan®		**EudraCT No.:** n.a.	
Name of active ingredient: Trans-4-[(2-amino-3,5-dibromo-benzyl)amino]cyclohexanol hydrochloride (= Ambroxol hydrochloride)		**Page:** 8 of 25	**Synopsis No.:** n.a.
Module: n.a.		**Volume:** n.a.	
Report date: 27 JUL 1977	**Trial No. / U No.:** U77-0166	**Date of trial:** n.a.	**Date of revision:** n.a.

Conclusions:	The recommended dose is 15 mg/2ml per inhalation. No manifestations of intolerance were observed.

Name of company: Boehringer Ingelheim		Tabulated Trial Report	Boehringer Ingelheim
Name of finished product: Mucosolvan®		**EudraCT No.:** n.a.	
Name of active ingredient: Trans-4-[(2-amino-3,5-dibromo-benzyl)amino]cyclohexanol hydrochloride (= Ambroxol hydrochloride)		**Page:** 9 of 23	**Synopsis No.:** n.a.
Module: n.a.		**Volume:** n.a.	
Report date: 27 JUL 1977	**Trial No. / U No.:** U77-0166	**Date of trial:** No data available	**Date of revision:** n.a.

Title of trial:	Final report on clinical trial of NA 872. (summary of studies U77-0166 A, U77-0166-B and U77-0166 –C)
Principal/Coordinating Investigator:	von Seefeld
Trial sites:	Multicenter and single center studies
Publication (reference):	Boehringer Ingelheim in-house report, 27 July 1977.
Clinical phase:	Not shown
Objectives:	Assessment of the efficacy of ambroxol (different application forms) in paediatric patients by measuring the relief of symptoms of acute and chronic airways disease such as chronic rhinitis, sinusitis, bronchitis, or common cold
Methodology:	Open label, uncontrolled multicenter
No. of subjects:	194 children aged 10 months–15 years)
Diagnosis and main criteria for inclusion:	acute and chronic airways diseases (bronchitis, asthmatic bronchitis, chronic bronchitis, bronchopneumonia, bronchial asthma, mucoviscidosis, chronic bronchitis with suspected bronchiectasis
Test product:	Mucosolvan® Tablets (15 mg) Mucosolvan® Syrup (2.5 mg/ml) Mucosolvan® Inhalation Solution (15 mg/2 ml)

Name of company: Boehringer Ingelheim		Tabulated Trial Report	Boehringer Ingelheim
Name of finished product: Mucosolvan®		**EudraCT No.:** n.a.	
Name of active ingredient: Trans-4-[(2-amino-3,5-dibromo-benzyl)amino]cyclohexanol hydrochloride (= Ambroxol hydrochloride)		**Page:** 10 of 25	**Synopsis No.:** n.a.
Module: n.a.		**Volume:** n.a.	
Report date: 16 May 1978	**Trial No. / U No.:** U77-0166	**Date of trial:** n.a.	**Date of revision: n.a.**

dose:	See efficacy/ clinical pharmacology conclusions below
mode of admin.:	Oral (tablets 15 mg) Oral (syrup 2.5 mg/ml) Inhalation (15 mg/2 ml)
batch no.:	N/A
Reference therapy:	none
dose:	N/A
mode of admin.:	N/A
batch no.:	N/A
Duration of treatment:	see individual studies
Criteria for evaluation:	
Efficacy / clinical pharmacology:	Liquefaction of bronchial secretions. Therapeutic efficacy was assessed taken clinical symptoms as basis.
Safety:	Adverse events Safety of NA 872 syrup (15 mg/5 ml) Safety of NA 872 solution (15 mg/2 ml) administered orally Safety of NA 872 inhaled solution (15 mg/2 ml) Local tolerability of NA 872 injection (15 mg/2 ml)
Statistical methods:	Descriptive statistics

SUMMARY – CONCLUSIONS:

Efficacy / clinical pharmacology results:

The clinical study of the tablets and children's syrup disclosed a mean effective dose of:

- 15 mg/day for the age group up to 2 years, corresponding to 1.6 mg/kg body weight
- 20 mg/day for the age group 2 to 5 years, corresponding to 1.25 mg/kg body weight
- 30 mg/day for the age group over 5 years, corresponding to 1.2 mg/kg body weight

The improvement of the bronchi symptoms of expectoration, cough, and dyspnea became noticeable in the first two to three days of the treatment.

For inhalation treatment with the solution, a daily dose of 15 mg = 2 ml per inhalation is recommended for children of all age groups. This mode of administration is particularly suitable for upper respiratory diseases such as rhinitis and sinusitis

No manifestations of intolerance were observed in this clinical trial.

Name of company: Boehringer Ingelheim		Tabulated Trial Report	Boehringer Ingelheim
Name of finished product: Mucosolvan®		**EudraCT No.:** n.a.	
Name of active ingredient: Trans-4-[(2-amino-3,5-dibromo-benzyl)amino]cyclohexanol hydrochloride (= Ambroxol hydrochloride)		**Page:** 12 of 25	**Synopsis No.:** n.a.
Module: n.a.		**Volume:** n.a.	
Report date: 16 May 1978	**Trial No. / U No.:** U77-0166	**Date of trial:** n.a.	**Date of revision: n.a.**

Safety results:

The global incidence of side effects was 8.1%.

Side effects occurred most frequently among patients treated with the tablets, occurring in a total of 183 cases, Treatment with the ampoules led to side effects in 9 cases. There were 6 cases with side effects in patients receiving the solution orally, and 4 cases among patients receiving the solution by inhalation

There were 15 cases (0.6%) in which the side effects were not considered tolerable, in 7 of which no causal relationship to study medication existed Therefore, there were a total of 8 cases in which side effects whose relation to the drug was probable could not be tolerated (0.31 %).

Conclusions:

Results lead to the recommendation of a daily dose of 15 mg (tablets), 2.5 ml/5 ml (syrup), or 15 mg/2 ml (inhalation solution). In general therapeutic efficacy and tolerability/acceptability can be considered good.

Name of company: Boehringer Ingelheim		**Tabulated Trial Report**	Boehringer Ingelheim
Name of finished product: Mucosolvan®		**EudraCT No.:** n.a.	
Name of active ingredient: Trans-4-[(2-amino-3,5-dibromo-benzyl)amino]cyclohexanol hydrochloride (= Ambroxol hydrochloride)		**Page:** 13 of 25	**Synopsis No.:** n.a.
Module: n.a.		**Volume:** n.a.	
Report date: 16 May 1978	**Trial No. / U No.:** U77-0166	**Date of trial:** n.a.	**Date of revision: n.a.**

Title of trial:	Final report on clinical trial of NA 872.
Principal/Coordinating Investigator:	von Seefeld
Trial sites:	7 study centers
Publication (reference):	Boehringer Ingelheim in-house report, 27 July 1977.
Clinical phase:	II/III
Objectives:	To assess safety and assess of Mucosulvan syrup (15 mg/ 5 ml)
Methodology:	Open, uncontrolled, multicenter
No. of subjects:	229 children (140 male, 89 female) aged 2 months to 14 years < 2 yrs: 52 2-5 yrs: 82 > 5 yrs: 95 In 4 children symptoms had so much improved after 3 or 4 days that treatment could be either terminated or continued at home One patient did not report for the follow up examination after 4 days
Diagnosis and main criteria for inclusion:	Children suffering from irritant cough and mucous congestion associated with acute or chronic airway disease 8outpatients and inpatients)
Test product:	Mucosulvan® syrup (15 mg/5 ml) (NA 872)

dose:	15 mg/5 ml < 2 yrs: 1.6 mg/kg bw, daily dose 15 mg; dose could be increased to 22.5 mg/day 2-5 yrs: 1.25 mg/kg bw, daily dose 22.5 mg; dose could be increased to 30 mg/day > 5 yrs: 1.2 mg/kg bw, daily dose 30 mg; dose could be increased to 45 mg/day
mode of admin.:	oral
batch no.:	N/A
Reference therapy:	none
dose:	N/A
mode of admin.:	N/A
batch no.:	N/A
Duration of treatment:	treatment lasted mostly (224 cases) 7 days, with only few cases needing a treatment for up to 15 days
Criteria for evaluation:	
Efficacy / clinical pharmacology:	Severity of: - Expectoration - Cough - Dyspnoea
Safety:	Adverse events, tolerability

Name of company: Boehringer Ingelheim		**Tabulated Trial Report**	Boehringer Ingelheim
Name of finished product: Mucosolvan®		**EudraCT No.:** n.a.	
Name of active ingredient: Trans-4-[(2-amino-3,5-dibromo-benzyl)amino]cyclohexanol hydrochloride (= Ambroxol hydrochloride)		**Page:** 15 of 25	**Synopsis No.:** n.a.
Module: n.a.		**Volume:** n.a.	
Report date: 16 May 1978	**Trial No. / U No.:** U77-0166	**Date of trial:** n.a.	**Date of revision: n.a.**

Statistical methods: Descriptive statistics

SUMMARY – CONCLUSIONS:

Efficacy / clinical pharmacology results:

Treatment lasted mostly 7 days, with only few cases needing a treatment for up to 15 days.

The moderate to severe irritant cough present at baseline diminished and improved or disappeared in 87% of the patients after 7 days. Expectoration was good in 78% and symptoms of dyspnoea improved as well in 53% of the subjects. A therapeutic effect was seen after the 2nd and 3rd day in 56% of the children.

The following reasons for inability to evaluate the effect were cited for 26 children: extensive concomitant medication, variable symptoms, variable statements of the child, and no improvement in symptoms.

Patients with spastic or asthmatic bronchitis or an airway infection received bronchodilators, corticosteroids, or antibiotics besides Ambroxol Sysrup. Concomitant treatment with antitussive drugs was necessary in 31 children.

Safety results:

Medication was judged to be tolerated “well” in 220 children, no information was available in 8 cases. The taste was liked by 209 children and for 220 the tolerability was excellent. 4 children had trial medication unrelated side effects.

Conclusions:

Mucosulvan® syrup (15 mg/ 5ml) was found of acceptable taste, well tolerated and effective, and may be recommended as a bronchosecretolytic agent in airway disease for the treatment of children of all ages

Name of company: Boehringer Ingelheim		Tabulated Trial Report	Boehringer Ingelheim
Name of finished product: Mucosolvan®		**EudraCT No.:** n.a.	
Name of active ingredient: Trans-4-[(2-amino-3,5-dibromo-benzyl)amino]cyclohexanol hydrochloride (= Ambroxol hydrochloride)		**Page:** 16 of 25	**Synopsis No.:** n.a.
Module: n.a.		**Volume:** n.a.	
Report date: 16 May 1978	**Trial No. / U No.:** U77-0166	**Date of trial:** n.a.	**Date of revision: n.a.** n.a.

Name of company: Boehringer Ingelheim		Tabulated Trial Report	Boehringer Ingelheim
Name of finished product: Mucosolvan®		**EudraCT No.:** n.a.	
Name of active ingredient: Trans-4-[(2-amino-3,5-dibromo-benzyl)amino]cyclohexanol hydrochloride (= Ambroxol hydrochloride)		**Page: 16 of 31**	**Synopsis No.:** n.a.
Module: n.a.		**Volume:** n.a.	
Report date: 16 May 1978	**Trial No. / U No.:** U77-0166	**Date of trial:** n.a.	**Date of revision: n.a.** n.a.

Proprietary confidential information
© 2011 Boehringer Ingelheim International GmbH or one or more of its affiliated companies. All rights reserved.
This document may not - in full or in part - be passed on, reproduced, published or otherwise used without prior written permission.

Title of trial:	Final report on clinical trial of NA 872.
Principal/Coordinating Investigator:	von Seefeld
Trial sites:	4 study centers
Publication (reference):	Boehringer Ingelheim in-house report, 27 July 1977.

Name of company: Boehringer Ingelheim		**Tabulated Trial Report**	Boehringer Ingelheim
Name of finished product: Mucosolvan®		**EudraCT No.:** n.a.	
Name of active ingredient: Trans-4-[(2-amino-3,5-dibromo-benzyl)amino]cyclohexanol hydrochloride (= Ambroxol hydrochloride)		**Page:** 17 of 25	**Synopsis No.:** n.a.
Module: n.a.		**Volume:** n.a.	
Report date: 16 May 1978	**Trial No. / U No.:** U77-0166	**Date of trial:** n.a.	**Date of revision: n.a.** n.a.

Clinical phase:	**II**
Objectives:	Assessment of the efficacy of ambroxol in paediatric patients by measuring the relief of symptoms of acute and chronic airways disease such as chronic rhinitis, sinusitis, bronchitis, or common cold
Methodology:	**Open, uncontrolled, multicenter**
No. of subjects:	136 children (76 male, 60 female) 4 months to 14 years old < 2 yrs: 21 2-5 yrs: 41 > 5 yrs: 74 Mucosulvan® solution (15 mg/2 ml) oral: entered: 111 Mucosulvan® solution (15 mg/2 ml) inhalation entered: 25 1 discontinuation (inhalation) due to marked improval 1 discontinuation (solution) : reluctant intake and vomiting
Diagnosis and main criteria for inclusion:	Children with acute bronchitis or rhinopharyngitis: oral application Children with with sinobronchitis or maxillary sinusitis: inhalation
Test product:	Mucosulvan® 15 mg/2 ml ambroxol solution (NA 872)

dose:	For oral and inhalant administration: < 2 yrs: 1.6 mg/kg bw, daily dose 15 mg; dose could be increased to 22.5 mg/day 2-5 yrs: 1.25 mg/kg bw, daily dose 22.5 mg; dose could be increased to 30 mg/day > 5 yrs: 1.2 mg/kg bw, daily dose 30 mg; dose could be increased to 45 mg/day The same dosages applied to inhalant administration. One 10 year old boy diagnosed as having pseudocroup and maxillary sinusitis received 6 ml twice a day.
mode of admin.:	Oral, inhalation
batch no.:	N/A
Reference therapy:	none
dose:	**N/A**
mode of admin.:	**N/A**
batch no.:	**N/A**
Duration of treatment:	duration was 5 days for 134 patients, up to 11 days for the others
Criteria for evaluation:	
Efficacy / clinical pharmacology:	Expectoration Cough Dyspnoea
Safety:	Adverse events

Name of company: Boehringer Ingelheim		Tabulated Trial Report	Boehringer Ingelheim
Name of finished product: Mucosolvan®		**EudraCT No.:** n.a.	
Name of active ingredient: Trans-4-[(2-amino-3,5-dibromo-benzyl)amino]cyclohexanol hydrochloride (= Ambroxol hydrochloride)		**Page:** 19 of 25	**Synopsis No.:** n.a.
Module: n.a.		**Volume:** n.a.	
Report date: 16 May 1978	**Trial No. / U No.:** U77-0166	**Date of trial:** n.a.	**Date of revision: n.a.** n.a.

Statistical methods: Descriptive statistics

SUMMARY – CONCLUSIONS:

Efficacy / clinical pharmacology results: During the first three days of a combined treatment (oral and inhalation) cough and expectoration diminished substantially. More than 2 thirds of the patients were symptom free or relieved by the fifth day. A therapeutic effect (alleviation of irritating cough) was seen in 82% of the children already on the 2nd or 3rd day of treatment.

Safety results: The tolerability of both formulations was good in 135 children, in a 3-year old boy treatment was discontinued for reluctance to take the medication and frequent severe vomiting being related to the oral administration.

Conclusions: 15 mg/2 ml of NA 872 solution- administered orally or by inhalation- is likewise indicated for the treatment of airway disease in children associated with production of sputum, cough and dyspnoea

Name of company: Boehringer Ingelheim		**Tabulated Trial Report**	Boehringer Ingelheim
Name of finished product: Mucosolvan®		**EudraCT No.:** n.a.	
Name of active ingredient: Trans-4-[(2-amino-3,5-dibromo-benzyl)amino]cyclohexanol hydrochloride (= Ambroxol hydrochloride)		**Page:** 20 of 25	**Synopsis No.:** n.a.
Module: n.a.		**Volume:** n.a.	
Report date: 16 May 1978	**Trial No. / U No.:** U77-0166	**Date of trial:** n.a.	**Date of revision: n.a.** n.a.

Title of trial:	Final report on clinical trial of NA 872. Clinical study of ampoules
Principal/Coordinating Investigator:	von Seefeld
Trial sites:	5 study centers
Publication (reference):	N/A
Clinical phase:	II
Objectives:	Safety study (local tolerability) of i.m. and i.v. injections of NA 872
Methodology:	Open, uncontrolled, multicenter
No. of subjects:	109 children (54 m, 55 f) 2 months to 14 years old < 2 yrs: 51 2-5 yrs: 24 > 5 yrs: 34
Diagnosis and main criteria for inclusion:	93 inpatients with acute or chronic airway disease, 16 inpatients with various internistic indications
Test product:	Mucosulvan solution for injection (15 mg/ 2ml)

dose:	< 2 yrs: 1.6 mg/kg bw, daily dose 15 mg (1/2 ampoule b.i.d.); dose could be increased to 22.5 mg/day 2-5 yrs: 1.25 mg/kg bw (1/2 ampoule t.i.d.), daily dose 22.5 mg; dose could be increased to 30 mg/day > 5 yrs: 1.2 mg/kg bw (1 ampoule b.i.d.), daily dose 30 mg; dose could be increased to 45 mg/day Because of poor venous conditions: study medication could be administered only once in 5 infants (2- 19 months old). Local tolerability was good in these cases.
mode of admin.:	Injection (i.v., i.m.) The injections were dosed according to recommendations based on age; in most cases, injections were given twice a day, viz. I.M. in 63 cases, I.V, in 42 cases, and alternately I.V. and I.M. in 4 cases.
batch no.:	N/A
Reference therapy:	none
dose:	N/A
mode of admin.:	N/A
batch no.:	N/A
Duration of treatment:	2 to 6 days
Criteria for evaluation:	
Efficacy / clinical pharmacology:	Local tolerance

Name of company: Boehringer Ingelheim		Tabulated Trial Report	Boehringer Ingelheim
Name of finished product: Mucosolvan®		**EudraCT No.:** n.a.	
Name of active ingredient: Trans-4-[(2-amino-3,5-dibromo-benzyl)amino]cyclohexanol hydrochloride (= Ambroxol hydrochloride)		**Page:** 22 of 25	**Synopsis No.:** n.a.
Module: n.a.		**Volume:** n.a.	
Report date: 16 May 1978	**Trial No. / U No.:** U77-0166	**Date of trial:** n.a.	**Date of revision: n.a.** n.a.

Safety:	Adverse reactions
Statistical methods:	Descriptive statistics

SUMMARY – CONCLUSIONS:

Efficacy / clinical pharmacology results:

Circumscribed local signs of irritation such as mild erythema and swelling were only seen in infants, once after I.V. and 5 times after I.M. injection. Reactions of this type are not uncommon in children of this age group and are related to the relatively greater sensitivity of the skin in infants; also, the injection technique is very important in these cases. No special measures (dressings, ointments, etc.) are necessary; the treatment was continued for 3 days.

Two infants reacted to the injection with pain (one to I.V. and one to I.M. injection), exhibiting a form of "crying restlessness". Local tolerance was good in both cases.

A 5-year-old boy reported local pain of short duration after the I.M. injection

Safety results:

Side effects of the systemic type were reported in 6 children, but a definite or probable causal relation to administration of NA 872 could be ruled out in all 6 cases.

Name of company: Boehringer Ingelheim		**Tabulated Trial Report**	Boehringer Ingelheim
Name of finished product: Mucosolvan®		**EudraCT No.:** n.a.	
Name of active ingredient: Trans-4-[(2-amino-3,5-dibromo-benzyl)amino]cyclohexanol hydrochloride (= Ambroxol hydrochloride)		**Page:** 23 of 25	**Synopsis No.:** n.a.
Module: n.a.		**Volume:** n.a.	
Report date: 16 May 1978	**Trial No. / U No.:** U77-0166	**Date of trial:** n.a.	**Date of revision: n.a.** n.a.

Conclusions:	I.V. and I.M. administration of NA 872 ampoules seems safe in children of all age groups inasmuch as both local and systemic tolerability may be evaluated as "good". When treating infants, their greater skin sensitivity as compared to older children should be taken into consideration.

Title of trial:	Final report on clinical trial of NA 872.
Principal/Coordinating Investigator:	von Seefeld
Trial sites:	13 study centres
Publication (reference):	N/A
Clinical phase:	Phase II studies
Objectives:	To summarize and evaluate therapeutic efficacy and tolerability of three different dosage forms of NA 872 in children with acute or chronic airway disease of NA 872
Methodology:	3 open, uncontrolled, prospective multicenter trials
No. of subjects:	The syrup (15 mg/5 ml) was given to 229 children, while 136 children were treated with the solution (15 mg/2 ml), and 109 children with the ampoules (15 mg/2 ml).
Diagnosis and main criteria for inclusion:	The study was carried out in both inpatients and outpatients with acute or chronic airway disease

Name of company: Boehringer Ingelheim		Tabulated Trial Report	Boehringer Ingelheim
Name of finished product: Mucosolvan®		**EudraCT No.:** n.a.	
Name of active ingredient: Trans-4-[(2-amino-3,5-dibromo-benzyl)amino]cyclohexanol hydrochloride (= Ambroxol hydrochloride)		**Page:** 24 of 25	**Synopsis No.:** n.a.
Module: n.a.		**Volume:** n.a.	
Report date: 16 May 1978	**Trial No. / U No.:** U77-0166	**Date of trial:** n.a.	**Date of revision: n.a.** n.a.

Test product:	Ambroxol syrup (15 mg/5 ml) Ambroxol solution (15 mg/2 ml), Ambroxol ampoules (15 mg/2 ml).
dose:	Dosage of the three dosage forms was based on age: The dosage guidelines established in the preceding clinical study for 3 different age groups - up to 2 years, 2 to 5 years, over 5 years - were confirmed in large part. In children over 5 years of age, the daily dose may be increased up to 45 to 60 mg. The recommended daily dose for inhalation treatment with the solution is 2 to 6 ml, depending on the age.
mode of admin.:	Oral Inhalation Injection (i.v., i.m.)
batch no.:	N/A
Reference therapy:	none
dose:	N/A
mode of admin.:	N/A
batch no.:	N/A
Duration of treatment:	2 to 6 days
Criteria for evaluation:	
Efficacy / clinical pharmacology:	Therapeutic efficacy was assessed taken clinical symptoms as basis Local tolerance.

Name of company: Boehringer Ingelheim		Tabulated Trial Report	Boehringer Ingelheim
Name of finished product: Mucosolvan®		**EudraCT No.:** n.a.	
Name of active ingredient: Trans-4-[(2-amino-3,5-dibromo-benzyl)amino]cyclohexanol hydrochloride (= Ambroxol hydrochloride)		**Page:** 25 of 25	**Synopsis No.:** n.a.
Module: n.a.		**Volume:** n.a.	
Report date: 16 May 1978	**Trial No. / U No.:** U77-0166	**Date of trial:** n.a.	**Date of revision: n.a.** n.a.

Safety:	Adverse reactions
Statistical methods:	Descriptive statistics

SUMMARY – CONCLUSIONS:

Efficacy / clinical pharmacology results:

A marked improvement in the bronchitic symptoms was apparent in most of the children by the second or third day of treatment; this was true both for treatment with the syrup and for treatment, either oral or inhalant, with the solution.

The most prominent effect was alleviation of irritative cough, which was generally associated with easing of expectoration

Safety results:

With few exceptions, the children liked taking the syrup and the solution, and tolerated them well. No manifestations of intolerance were observed in connection with the inhalation treatment.

I.V. and I.M. injections are well tolerated, both locally and systemically. Minor local irritations occurred in a few infants after I.M. injection, but this was tolerable and necessitated no special therapeutic measures.

Conclusions:

On the basis of the results on hand, the therapeutic use of NA 872 syrup and NA 872 solution can be recommended for children of all age groups who have symptoms of irritative cough and production of sputum. The safety of the NA 872 ampoules has thus been clinically confirmed also in children.